Training services best practices guide.

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Content

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1.- INTRODUCTION

One of the main missions of the EuroCC Project, to which the National HPC Competence Center in Spain (NCC) belongs, is to support the national centers in the creation of their individual operational frameworks, while accessing and making the most of the experience and knowledge currently available at national and European level.

Therefore, from the National HPC Competence Center in Spain (NCC), we want to share our experience and knowledge in the organization of HPC training, both with the other National HPC Competence Centers, as well as with all other users for whom it may be useful. With this purpose we have created this Guide of good practices, with the intention of providing guidance on the steps to follow, from our experience, to create, organize and carry out HPC training, which are useful, valued and lasting.

At the National HPC Competence Center in Spain, in addition to computing services available to academia, industry and public administrations, we have been improving and expanding our training services and trying to meet the needs of the community.

During our trajectory, multiple courses have been developed and taught, focused on three main topics:

- Initiation to HPC and HPC tools.
- Parallel, distributed and heterogeneous programming.
- Quantum computing.

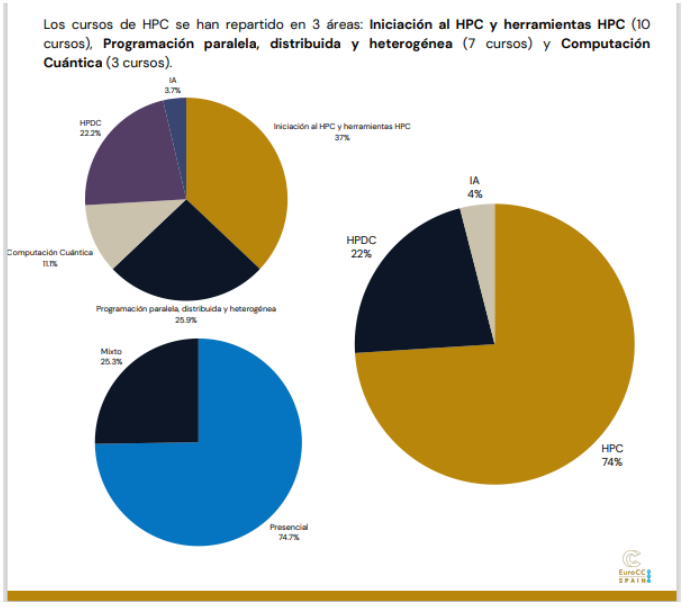

Fig. 1 Diagram of trainings conducted by NCC Spain.

These training courses have been deployed with different levels of difficulty, depending on the profile of the students. Therefore, for their development, the target group to which the specific course was going to be focused on was taken into account from the beginning, which also determined the contents of the courses.

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Likewise, they have also been given in different formats, online, face-to-face and mixed, depending on the demand of the students, according to their needs, and several surveys have been carried out to find out their needs.

In this order of things, and based on our own experience, in this Guide to Best Practices we will collect the aspects that we consider should be taken into account when designing a training course and what is the logical order for its configuration. We are trying to condense our experience and knowledge into a guide that will help trainers in the field to broaden their skills.

2.- PREVIOUS ANALYSIS: DETECTION OF NEEDS

In coherence with the objective pursued by EuroCC 2 to raise awareness of HPC, its utilities and, in general, to increase the existing knowledge about its use, the first thing we have done is to specify a series of basic aspects that will be the basis for the subsequent configuration of the training courses. To do this, we have relied on the results of a series of studies, as well as a series of opinion surveys that we have created and disseminated among HPC users, which have helped us to learn more about their training needs.

The following is an example of our training needs survey:

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1. Are you from *

- ◯ Academia
- ◯ Industry
- ◯ Public administration
- ◯ Research institution
- ◯ Otro: _____

2. How many years of experience with HPC/HPDA/AI do you have? *

- ◯ 0-2
- ◯ 3-5
- ◯ 6-10
- ◯ 10+

3. Please, specify your main scientific discipline or field of work: *

- ◯ Biochemistry, bioinformatics and life sciences
- ◯ Chemical sciences and materials
- ◯ Computer sciences, Computer Engineering, Electrical Engineering, Telecommunications
- ◯ Earth system sciences
- ◯ Economics, finance and management
- ◯ Engineering
- ◯ Fundamental constituents of matter
- ◯ Fundamental physics
- ◯ Linguistics, cognition and culture
- ◯ Mathematical sciences
- ◯ Physiology and medicine
- ◯ Universe sciences
- ◯ Otro: _____

4.Type of code(s) that you run on RES systems:

- ◯ In-house developed codes (mainly)
- ◯ Standard packages for your field (mainly). Please specify the packages that you use:
- ◯ Otro: _____

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5. **Can your main software be scaled up to run on multiple CPUs?**

- ◯ Yes
- ◯ No
- ◯ Don't know

6. Does your main software run on GPUs or on other accelerators?

- ◯ GPUs
- ◯ Other accelerators
- ◯ Don't know

7. What challenges do you see with regard to the training for HPC/HPDA/AI users?

- ◯ Training courses with the same topics are repeated constantly and no new training courses with new topics are available.
- ◯ Broad offer of training for beginners and hardly any training for intermediate or advanced users.
- ◯ I am not aware of training courses for HPC/HPDA/AI users.
- ◯ I cannot find HPC/HPDA/AI training related to my field of work.
- ◯ I do not have time to take training courses.
- ◯ I do not have a pre-assigned budget for training courses at my company/institution.
- ◯ The timing of the training courses does not suit me.
- ◯ Otro: _____

8. How could these challenges be overcome?

Tu respuesta

9. What training topics would be of interest to you and what level?

	Introductory	Intermediate	Advanced/Expert
Training topics / Level	◯	◯	◯
a) Artificial intelligence, machine and deep learning	◯	◯	◯
b) Data science and high performance data analytics	◯	◯	◯

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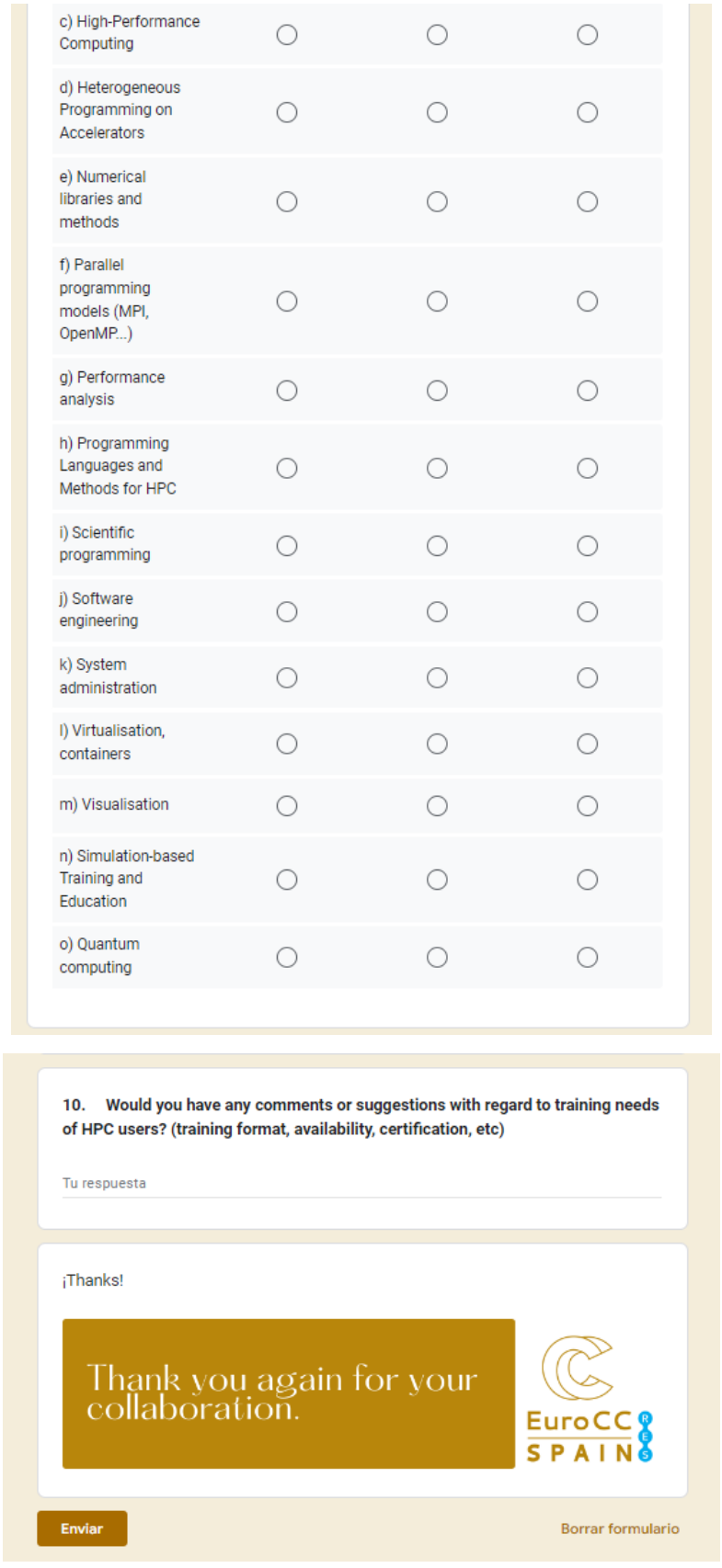

Fig. 2.- Training needs survey available on our website at: Survey - Trainings for HPC Users

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It is important to be clear about the focus of the course we want to teach, for which it will be necessary to be clear about the specific needs of the recipients in relation to a specific topic, in order to be sure that we are covering them adequately.

It is therefore essential, before starting to create any course, to define the following aspects:

a) Subject matter and objectives.

In line with EuroCC 2's mission and the needs detected among users, the subject matter of our courses has been focused mainly on three areas:

- o Initiation to HPC and HPC tools.
- o Parallel, distributed and heterogeneous programming.
- o Quantum computing.

Once the subject matter of the course has been defined, it will also be necessary to define the objective of the course, i.e., what you want your students to learn, experience and achieve in the training. Defining the knowledge and competencies you want to impart in order to achieve the expected results. This will keep us focused in any case, developing the course materials for its achievement, and will allow us, once the training is finished, to know whether or not we have managed to fulfill the purpose we have initially defined. The learning objectives must be: specific, measurable, achievable, realistic and timely.

b) Target group.

It is essential to be clear about the target group to which the training is addressed, since each target group will have different needs and the contents will be determined according to those needs.

In our case, we have focused our training mainly to:

- Industry.
- The academic and research world.
- Public administration.

At this point, it is also important to define the geographical scope of our target group, since this will also be decisive for the adaptation of the contents, for example, to different languages, or the mode of delivery of the courses, among others.

c) Knowledge level.

Another fundamental aspect is to know the students' previous knowledge, learning styles, motivations, as well as their preferences and weaknesses. This will determine how to present the information and meet their needs.

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In our case, we have detected different levels of knowledge in HPC, so we have carried out from introductory courses focused on users with no knowledge in HPC or basic knowledge to more advanced courses.

This element is very relevant, since, depending on the level of knowledge of the students, the contents of the courses will be adapted. Therefore, it must be taken into account from the beginning of the design of the course material and content.

d)Training modality.

The choice of course modality will certainly be conditioned mainly by the resources available, but also by the previous elements, as well as by the geographical dispersion of our target group. If our target group is geographically dispersed, an online modality will be more appropriate, while if it is more concentrated, a face-to-face and more direct modality may be more effective.

However, to determine this aspect, it is essential to take into account the preferences of the users, since they will not always be linked to dispersion.

Although, in recent years, the on-line modality has certainly acquired great relevance and is usually preferred by users, the face-to-face modality also continues to have great advantages, since it allows a more direct treatment.

3.- DEFINITION OF CONTENTS AND COURSE DESIGN

Once all the points listed in the previous section have been defined, it is possible to move on to the next phase, which will be the definition of the course contents, appropriate to the subject matter and objectives of the course, the target group, the level of knowledge and the modality determined in the first stage.

The design of the course materials should be as simple, visual and clear as possible. To this end, the following questions must be answered:

1. WHY. Awaken in the students the curiosity to know “why” they should pay attention to this training. “Why” will be useful to them.

2. WHAT. This question corresponds to the content, theory, body of learning for the selected topic.

3. HOW. Explains how the theory is actually applied. If there is a process with steps, it is in the HOW. A demonstration and an exercise as well, to show the actual, practical application of the content.

4. WHAT IF. Potential variations on the theme can be introduced here. Showing how to apply what has been learned in different ways, in different circumstances.

For the design of the content, it is suggested to start with a more generic initial and introductory topic, where the course agenda is presented, so that the students know how the course content will be structured and the order in which the contents will be taught.

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Each of the topics or sections should have a presentation or itinerary so that the student is aware of the objective and work methodology. In addition, each topic should follow a similar format so that, once the student is familiar with the itinerary, it is easy to follow.

On the other hand, when designing a course, it is advisable to divide the material into: obligatory material and additional material. It should be avoided that the materials are only reading PDFs, and it is suggested to include reading material, articles that talk about the topic, along with audios and short videos (learning microcapsules).

It is recommended to include group work activities, such as assignments, monographs, wikis and collaborative glossaries. The activities should motivate the student to maintain the pace of study, research and learning.

It is also advisable to enable discussion forums as collective learning spaces through discussion threads, which can be used to raise a topic or ask a question, initiating a series of responses and reactions that promote critical thinking and cohesion on the part of the students. In those on-line modalities, it is especially recommended to set up a doubt forum, so that students can get to know each other and ask and find answers to the questions and problems that arise.

Key elements when designing the course

- ✓ **Definition of knowledge/content** to be taught during the course, according to the hours of duration of the course.
- ✓ **Definition of the format and structure.**
- ✓ **Organization of the content in modules and sections.**
- ✓ **Chronological organization of the subjects** to be taught, and determination of the time to be allocated to each of the modules.
- ✓ **Session plan:** what you have to do, when and how long it will take. If you still don't get the timing right, draw up a detailed session plan and see how it works during the training: adapt it if necessary for next time. You should segment the session plan and add learning objectives to each segment. It is a very good idea to check the achievement of these learning objectives at the end of each segment.
- ✓ **Create/enable the user login system** to be given to access the content.
- ✓ **Image and summary of the timeline to be followed.**
- ✓ **Slide deck:** it is recommended to develop a slide guide that will be useful and visible to both the trainer and the learners. Add images to the visual slides with graphics, illustrations of the content or just plain fun. Avoid explaining fun images: they should speak for themselves. Minimize slide animations as they can be distracting to your audience.
- ✓ **Friendly, didactic, functional, simple and clear design.**
- ✓ **Incorporation of interactive content:** audios, videos, micro learning capsules and configuration of individual and group activities.
- ✓ **Tutor notes:** to assist the trainer with explanations of the slides, and background information. They can be added to the slide deck and be visible to the trainer, but not to the learners, although in that case the space available for information is usually very limited.
- ✓ **Definition of resources and activities to be used** (according to the needs and objectives and modality of the training).

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- ✓ **Learner notes and/or accompanying texts**. A stack of slides is not the same as a complete training material. Be sure to provide students with enough materials so that they can find the essence also when you are no longer there to help them. You can do this by adding notes to accompany the slides, supplemented with additional texts, readings, articles, whatever is relevant and useful.
- ✓ **Exercise materials.** When you do exercises or activities make sure you have very clear instructions and very explicit and clear handouts to accompany them.
- ✓ **Definition and creation of question bank for questionnaires.**
- ✓ **Configuration of questionnaires according to evaluation purposes.**

For on-line mode:

- ✓ Files sorted in folder to allow downloading and later off line consultation.

Fig. 3 Capture contents of an NCC Spain course in Moodle

Other recommendations (TIPS):

- ✓ **Comprehension**. Use simple language and avoid complexity. Avoid long sentences, commas, and double negatives.

- ✓ **Easy reference.** Make sure your students can easily find what they are looking for. A good index is a must, especially if your materials are extensive and you plan to reuse them many times. A set of references to the source and/or bibliography will also be helpful to students.

- ✓ **Readability.** In both projected slides and printed documents, make sure that legibility is paramount, for this:

  o Source: sufficiently large and free of distractions.

  o Text and background contrast in both color and chiaroscuro.

  o In the case of text slides: avoid overly long presentations.

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o Sources size: it depends on the typeface, but size 12 is recommended as a minimum.

o Avoid distractions: do not use backgrounds that make text difficult to read and keep logos to a minimum.

- ✓ **Portability and security.** Printed materials are still widely used, but their production is less and less recommended. Electronic materials are more desirable. Whatever electronic format you use, choose one that works on most computers. PDF is the most commonly used. Avoid sharing PowerPoint or Word files. If you provide audio or video material, either before or during training, it is advisable to use mp3 for audio and mp4 for video.

- ✓ **Lifecycle.** When you make any training document, video, demo, or any part of your training materials available to learners - be sure to set the expiration date at the same time and communicate it to the learners.

4.- RESOURCES REQUIRED

Once the contents, the modality of the course and its duration have been defined, it must be ensured that the necessary human and material resources are available for its delivery, which implies:

- ✓ Having the teaching staff with the appropriate knowledge to teach the course.
- ✓ To have the necessary technological resources, if applicable.
- ✓ To have the required spaces at the times when the courses will be given, in the event that the modality of the course is face-to-face or mixed.
- ✓ To have the necessary auxiliary equipment.

Therefore, in this phase, it must ensure that all the resources required for the effective execution of the course are available. Following the collaboration mission of the EuroCC 2 Project, ask for collaboration, if necessary, to other NCCS that can provide support.

In case you do not have the resources you have previously estimated you will require, try to adapt the course to your available resources.

5.- DISSEMINATION OF THE TRAININGS

a) Communication plan.

You should try to plan as far in advance as possible. If your training is well known and you have good communication channels for public relations, you will not need as much advance notice as in cases where the course is being given for the first time and is not as well known. It is recommended to start advertising your course at least three to four months in advance.

In case your training has yet to gain recognition, you will have to start much earlier. Because you will have to approach your target group and find the most suitable channels to do so, which will take time.

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This communication plan should outline what you will say, what to tell, when and to whom. You must give people enough time to digest what you send them, especially when it is going to in.

b) Dissemination.

In the first information pills that you publish about the training, you must clearly communicate:

- What is the objective of the course.
- What is the content of the course.
- What are the dates foreseen for its celebration.
- What is the target audience.

Likewise, the following information must be clearly available to interested parties:

- ✓ The competencies that the participants will acquire with the training.
- ✓ Modality of the training.
- ✓ Summary of the content, which can be as simple as a bulleted list.
- ✓ The audience you want to reach and also what level of knowledge or education they must have to make the course a success.
- ✓ Location where the course will be held (if in person).

In NCC Spain, although, on our website, this content is available to the public a little more extensive and detailed.

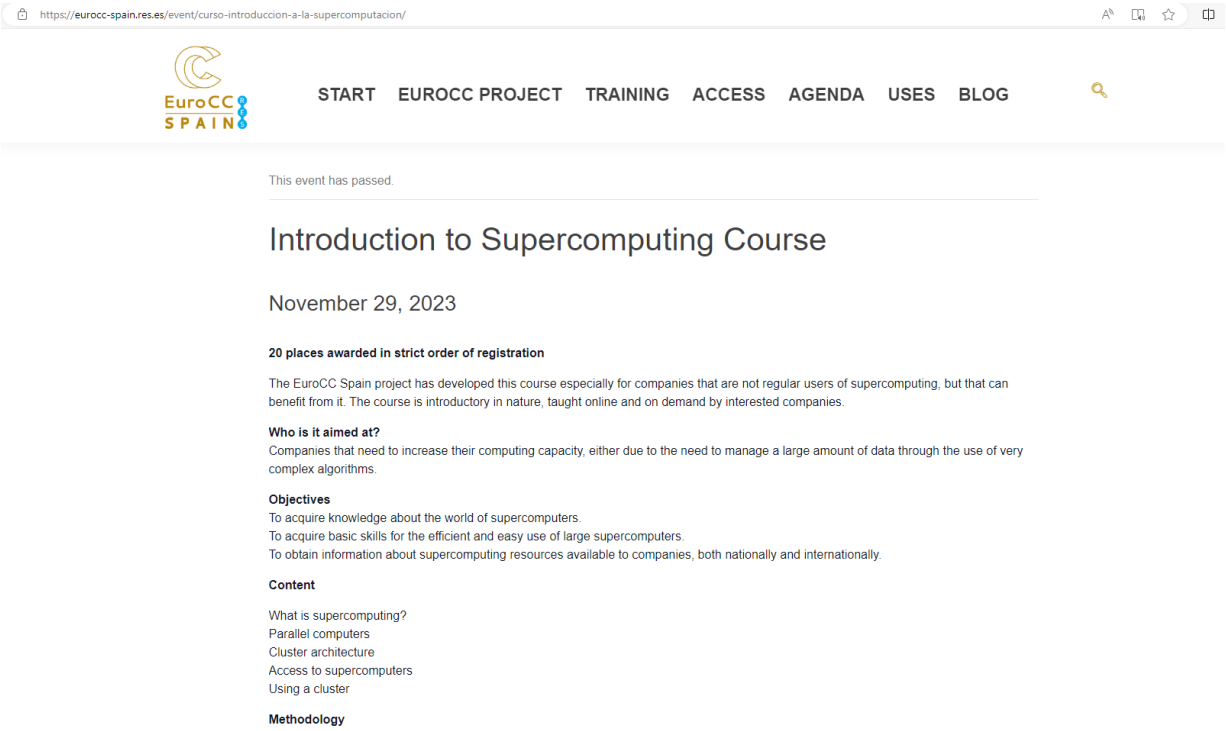

Fig.4 Information on the Introduction to Supercomputing course is available on our website at: [Introduction to Supercomputing Course - EUROCC SPAIN]

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We have also introduced a course search engine on our website, which allows users to search for courses that match their interests, as well as a portfolio of courses that are frequently offered by our partners, so that users can access them more easily.

CURSO IMPARTIDO	ESPECIALIDAD	NODO	VER MÁS
Modern tools to work in AI and Quantum Computing	HPC	SCAYLE	¡Accede al curso!
Seminario de Computación Cuántica	HPC	SCAYLE	¡Accede al curso!
Workshop myQLM	HPC	SCAYLE	¡Accede al curso!
Introducción a la Supercomputación	HPC	UC	¡Accede al curso!
Taller Uso FinisTerrae III	HPC	CESGA	¡Accede al curso!
Curso práctico de metagenómica y diversidad microbiana utilizando Supercomputación	HPC	SCAYLE	¡Accede al curso!
Earth Sciences Simulation Environments	HPC	BSC	¡Accede al curso!
Short course on HPC-based Computational Bio-Medicine	HPC	BSC	¡Accede al curso!
Introduction to simulation environments for Life Sciences	HPC	BSC	¡Accede al curso!
Performance Analysis and Tools (Paraver)	HPC	BSC	¡Accede al curso!
Programming of Petaflop Machine: MareNostrum5	HPC	BSC	¡Accede al curso!
Pre-exascale System Administration: MareNostrum5	HPC	BSC	¡Accede al curso!
Introduction to OpenACC	HPC	BSC	¡Accede al curso!
Curso Práctico de programación en Sistemas Heterogéneos	HPC	UC	¡Accede al curso!
Parallel Programming Workshop	HPC	BSC	¡Accede al curso!
Programming Distributed Systems (COMPSs)	HPC	BSC	¡Accede al curso!
Introduction to Heterogeneous Memory Usage	HPC	BSC	¡Accede al curso!
Heterogeneous Programming on GPU with MPI(OMPSs)	HPC	BSC	¡Accede al curso!
Heterogeneous Programming on FPGAs with OmpSs@FPGA	HPC	BSC	¡Accede al curso!
Introduction to programming in CUDA	HPC	BSC	¡Accede al curso!
Managing distributed data with Hecuba and dataClay	HPDC	BSC	¡Accede al curso!
Curso diseño experimental y análisis metagenómico utilizando supercomputación	HPDC	SCAYLE	¡Accede al curso!
Curso práctico de iniciación al uso de la supercomputación aplicado al análisis de datos RNAseq	HPDC	SCAYLE	¡Accede al curso!
Introducción al uso de OpenCAYLE	HPDC	SCAYLE	¡Accede al curso!
Introduction to Big Data Analytics	HPDC	BSC	¡Accede al curso!
Research Data Management for Beginners	HPDC	BSC	¡Accede al curso!
Inteligencia Artificial, Deep Learning e Introducción al Big Data	IA	SCAYLE	¡Accede al curso!

Fig. 5 Captura de nuestro portfolio de training disponible en nuestra página web en: Cursos - Informe 2.0 (res.es)

- **Media:** for an adequate dissemination it is very important to choose the media that can best reach your target audience.

From **NCC Spain**, the media used have been mainly publications in social networks such as LinkedIN or Twitter and its dissemination on our website. But they have also been made known in our events or presentations in which EuroCC participates or organizes. Likewise, the dissemination has been provided not only from the social networks of EuroCC2 but also from the social networks of the different partners.

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Fig. 6 Capture course broadcast on Twitter

Other recommended aspects to inform, specifically to the students:

- ✓ Managing expectations. Another relevant information to communicate to the students is what is expected of them. Therefore, it is also advisable to indicate aspects such as:

  - What are the prerequisites for the training?
  - How should they prepare beforehand?
  - What should they bring to the training?
  - Is there a dress code?
  - What can they expect in terms of food and drink?
  - Should they bring a laptop and, if necessary, a specific operating system?
  - Do they need to pre-install any software?
  - Do they need to have root/administrator rights?
  - Do you have a policy on taking photographs, recording audio or video, sending tweets or publicly broadcasting events during training?

- ✓ Training schedule and travel tips. Be sure to send out a clear training schedule and useful travel tips or references a week or two before the training begins. If you do it much earlier, participants may not pay much attention to this information and forget it. If you do it later, they will tell you that the information was sent too late. Tips such as how to get to the venue by the most obvious means of transport (car, cab, train, plane) and one or more relevant maps are very useful in this regard. Information on accommodations and restaurants is also very useful.

c) Logistics checklist.

It is recommended that a logistical checklist be drawn up that lists everything that needs to be done before, during and after the training to make it a success. Logistics include all the necessary conditions for the training, from the availability of a well-equipped training room, coffee breaks, to climate control, mailing lists and materials. The idea is that you can reuse the checklist to prepare and execute the training courses, ticking off each item once completed.

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6.- TESTING

Before the training sessions, we recommend you to check that:

- ✓ The computer media and electronic devices you will require are working properly.
- ✓ The material is accessible and downloadable correctly.
- ✓ The facilities (in case of face-to-face training, are in good condition for the proper development of the course).

Likewise, we also recommend that the first time a course is to be given, a test of its implementation should be carried out, to check that the contents are adjusted to the established times and that everything works correctly. If this is not the case, you can adjust it before starting the course.

7.- EXECUTION OF THE TRAININGS

a) Execution

For the good execution of the training courses we recommend that you try to stick as much as possible to the previously defined chronogram and schedules, since the misalignment of the same can hinder the good development of the training.

Experience tells us that certain unforeseen events often occur that can delay the development of the course in time, so we recommend that you always leave a margin of time so that in the event that such unforeseen events occur, they affect as little as possible.

Also, you should always be prepared for some flexibility, so that if you realize that, for example, you are losing the attention of the students, or they are not following the thread, have some resources ready, to capture their attention again or give them a break, for which you must always have a margin of time.

b) Final evaluation

It is recommended to end the training with a test or evaluation of the knowledge acquired, either orally, in writing or by electronic means. Whatever test you take, make sure that it is in line with the learning objectives. Evaluation should be seen as part of the learning process. Ideally, the results of the test should be made known to the trainees before the end of the training.

If passing the test is a requirement and someone does not pass, let them know privately.

Another way to evaluate the knowledge acquired is by performing a task or activity in which the subject matter learned must be put into practice. When you opt for this option, you must make it very clear what tasks you are asked to perform.

In any case, it is necessary to inform the students from the beginning that this type of test is going to be performed, whether it is a mandatory requirement to pass it or not in order to obtain the certificate of accreditation of knowledge and clearly define either the date of completion or the deadline for delivery of the task.

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This evaluation will be very useful to be able to objectively assess whether we have fulfilled the course objectives or not. If the evaluations show that most of the students do not show an acceptable knowledge of the contents taught, it means that something has failed in the training. Therefore, as a result of these evaluations, an analysis should be carried out on what has failed to achieve the proposed objectives. This, together with the students' evaluations, will lead us to propose possible improvements.

c) Certificate or accreditation of knowledge

As formal recognition that trainees have successfully completed the training, there are several options:

- ✓ A paper or digital certificate, with their name, a characterization of the training content, the number of hours they have spent preparing for and following the training, the name of the entity providing the course, the names of the trainers, and a signature of some relevant authority figure.

- ✓ A letter to the trainee, repeating much of what should be on the paper certificate, and again signed by the lead trainer. It is helpful if they receive this letter as a pdf attachment to an email sent to them.

- ✓ Accreditation points, if you can register your training with any accreditation body, then your training can be rated with a certain number of points or credits in their education system. This is very useful for students who are members of such programs, as they need to continuously collect such points to stay in good standing.

8.- CLOSING OF THE TRANINGS

a) Training survey

The most widespread method to know the opinion of the students is usually a written evaluation form that is filled in at the end of the training. As this is the method we have used at NCC Spain, it is also very useful the evaluation that can be done orally throughout the course, especially during the breaks. Among the different ways to know the evaluation of our course, we can highlight:

- **Opinion survey:** either on paper or digitally, considering that conducting the survey digitally is easier to manage.

  Experience shows that it is more effective to carry out the survey either on the last day of the course, or if it is allowed to do it outside the course schedule, indicating that it is a mandatory requirement to have completed it in order to receive the accreditation certificate.

  It is recommended to leave a free field in which students can give any other opinion or comment that may not have been mentioned in the questions.

- **External assessment:** Another option is to ask an experienced teacher to attend your training and write down comments and suggestions for you to use later to improve the materials and your teaching. Ideally, the evaluator should be another tutor, pero en realidad puede ser cualquiera con una mente crítica y amplia experiencia.

We provide as an example one of the satisfaction surveys, which have been delivered in one of our courses, in this case it was sent on-line:

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Curso Práctico de Metagenómica y diversidad microbiana utilizando supercomputación - 5ª Edición

Introducción a Linux

¿Le ha resultado útil el seminario de introducción a Linux?

- ◯ Sí
- ◯ No

**- Comentarios sobre el seminario de IL

Tu respuesta

**- Valore del 0 al 5 a los ponentes que han participado en el Seminario

	0	1	2	3	4	5
	◯	◯	◯	◯	◯	◯

**- ¿Cree que el material proporcionado ayuda a una mejor comprensión del temario?

Tu respuesta

**- ¿Cambiaría algo del seminario? Extensión, dificultad, ponentes, etc.

Tu respuesta

Cuestionario general

1.- ¿La difusión e inscripción del curso ha sido adecuada?

- ◯ Si
- ◯ No

2.- Valore del 0 al 5 a los profesores

	0	1	2	3	4	5
	◯	◯	◯	◯	◯	◯
	◯	◯	◯	◯	◯	◯

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3.- Valore las distintos aspectos de las clases de 0 a 5, siendo 0 la peor valoración y 5 la máxima

	0	1	2	3	4	5
Explicación teórica de los pasos a realizar	○	○	○	○	○	○
Explicación teórica de los pasos a realizar	○	○	○	○	○	○
Facilidad de seguir el flujo de trabajo	○	○	○	○	○	○
Facilidad de seguir el flujo de trabajo	○	○	○	○	○	○
Organización de las clases	○	○	○	○	○	○
Organización de las clases	○	○	○	○	○	○

Comentarios al respecto

Tu respuesta

4.- ¿Qué partes del procedimiento han sido más difíciles de comprender?

Tu respuesta

5.- ¿Considera que este curso cubrió sus expectativas?

Tu respuesta

6.- ¿Los métodos, estilo y ritmo del curso le han resultado atractivos?

Tu respuesta

** ¿Qué te ha parecido la utilización de Kahoot en el curso?

Tu respuesta

7.- ¿Qué aspectos del curso mejoraría?

Tu respuesta

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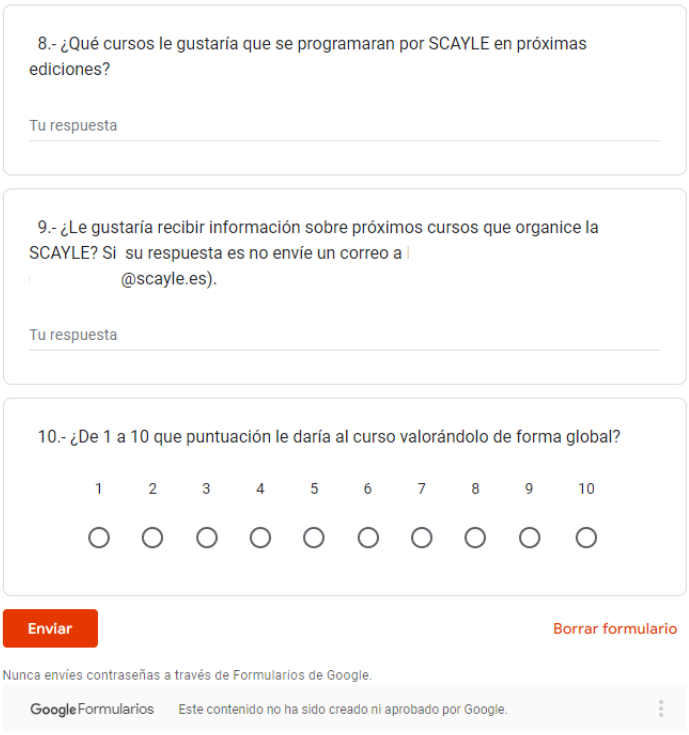

Fig. 7 Satisfaction survey used in the Metagenomics and Microbial Diversity Workshop using - 5th Edition

b) Possible improvements.

The students' evaluation of the course should be taken into account. However, it is good to take into account those positive aspects in which we have obtained a better valuation by the students, since this will reflect which aspects we have done well and we should maintain. Special attention should be paid to the aspects that were rated the worst by the students. It will be those in which a more exhaustive analysis of why they have failed, and how we can improve them for future editions should be carried out.

c) Maintaining contact.

It will depend on the type of training and the environment in which it takes place, but in general we recommend maintaining contact with the students, since they can surely be a source of great opportunities for collaboration in the future.

Also, taking into account that most of the courses developed within the scope of EuroCC 2 are certainly related, students who have been interested in a course, are in turn potential students of other related courses. In this sense, we recommend, in compliance with data protection regulations, to ask for their express consent (for example, when registering for the course), in order to send them information about other courses that we are going to carry out. This will allow us to generate a portfolio of potential interested parties, which will facilitate registrations for future courses.

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